



# IOTRON™ SENSORS

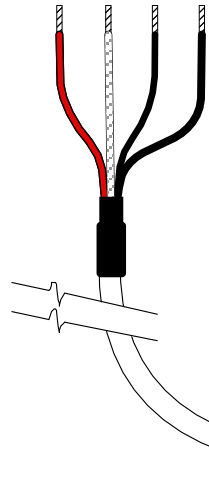
## INTEGRATED INDUSTRIAL pH SENSOR SPECIFICATIONS

<u>Sensor Part Number &amp; Short Description:</u>	<b>5531</b> – Pulp & Paper Resistant pH Sensor for Inline and HOT-TAP Installations Double O-Ring seals for inline interface & ¾" MNPT for securing into sensor holder
<u>Configuration Type:</u>	<i>For use with ASTI Supplied 1.5", 2.0", 2.5" Sanitary or 1.25" NPT Threaded Sensor Holder or ASTI Supplied Valve Retractable (HOT-TAP) Sensor Holder Only</i>
<u>General Sensor Specifications:</u>	
Operating Temperature Range:	-5 to 105°C (-35 to 150°C with Extreme Dehydration Resistant "E" Option – PVDF Only)
Operating Pressure Range:	1 to 200 psig (6.9 to 1379 kPa) with ASTI Sanitary / 1.25" MNPT Sensor Holder 1 to 100 psig (6.9 to 690 kPa) with ASTI HOT-TAP Retractable Assembly
Sensor Body Material:	RADEL® R-5000 NT (Poly-Phenyl-Sulfone, PPSU)
Junction Support Matrix Material:	KYNAR® (Poly-Vinylidene-Fluoride, PVDF) Standard or Polypropylene (PP) - <b>5531PP</b>
O-Rings Material of Construction:	Viton®-75 is standard, 2 each redundant O-rings are used to ensure seal integrity; CV-75 ("W"), Simriz® 485 ("U") or Kalrez® 4079 ("K") are available as upgrade options
External Dimensions:	See Drawing 5-2
<u>pH Measurement Specifications:</u>	
Measurement pH Range:	0 to 14 pH (-0.5 to +14.5 with Wide Range Option Invoked, Alpha Prefix "V")
Measuring Glass Type:	Low-Profile Parabolic Thick-Wall Break-Resistant, Green Glass (MUGG)
pH Glass Dimensions:	0.315" (8.0 mm) DIA
Initial Impedance:	< 1,500 MΩ @ 25 °C
Sodium Ion Error:	Less than 0.15 pH in sodium (Na <sup>+</sup> ) solutions at pH 14.00
Acidic Error:	Less than 0.05 pH in hydrochloric acid (HCl) solutions at 0.00 pH
<u>Reference System Specifications:</u>	
Type:	Double Junction Standard (Triple Junction Optional, Alpha Prefix "TJ")
Reference Half Cell:	Ag/AgCl, Saturated KCl
Primary Junction:	Porous Ceramic, Sat. KCl in crosslinked polymer, Interfaced to Secondary Junction
Secondary Junction:	Solid-State Non-Porous Cross-Linked Polymer embedded in Kynar/Polypropylene Matrix holds excess KCl assuring saturation at all temps for stability & long sensor service life
<u>Supported Order Options with Alpha Prefix Order Code Designation:</u>	Ammonia gas resistant ("A"), Chlorine gas resistant ("C"), Organic Media Resistant ("L"), Solvent Resistant ("TS"), 3-Wire TC ("M"), ACCU-TEMP Fast TC ("X"), Add Protective Tines 4 ea ("GR"), Add Protective Tines 2 ea ("GRO"), Shielded Preamp Cable ("BL")
<b><i>Inquire to factory for specials</i></b>	
<u>Example Recommended Applications:</u>	Abrasive pulp slurries, high pressure and high flow velocity paper process lines. Inline, immersion or HOT-TAP retractable installs for use bleaching and digester process lines.
<u>Storage and Shelf Life:</u>	One (1) year from date of dispatch from factory when stored at indoor ambient room temperature with proper orientation & protector cap. Extreme Dehydration Resistant Option (Alpha Prefix "E") sensors are suitable for cold storage down to -35 °C (-31 °F).
<u>Available Configurations &amp; Options:</u>	
Integrated Components:	- Temperature Compensation Element (compatible type must be specified) - Solution Ground Liquid Earth, 316SS (alpha prefix "Y"), or Platinum (alpha prefix "Pt") - Analog Conventional or Differential Preamplifier (Contact factory for available options) - Smart digital sensor board for use with 3TX-HiQ-pH Intelligent pH & ORP transmitters
Analog Sensors without integral preamplifier:	Terminated with Male BNC connector (-MBNC) or Tinned Lead Wires (-TL)
Analog Sensors with integral preamplifier:	Terminated with Tinned Lead Wires (-TL) or Quick Disconnect NEMA 6P Snap (-Q7M)
Analog Dual pH & ORP All-in-one Sensors <i>without integral preamplifier style only:</i>	Terminated with tinned lead wires (-TL), Alpha Prefix "PtD", 2 each reference half-cells allow for simultaneous use on two completely separate input channels or transmitters
Digital Smart Sensors:	Terminated with IP67/NEMA 6P rated waterproof & corrosion resistant snap connector. For 3TX-HiQ-pH Intelligent pH/ORP transmitters or HiQDT style with RS-485 MODBUS RTU to interface with any suitable PLC or SCADA (Minimum Quantities may apply)

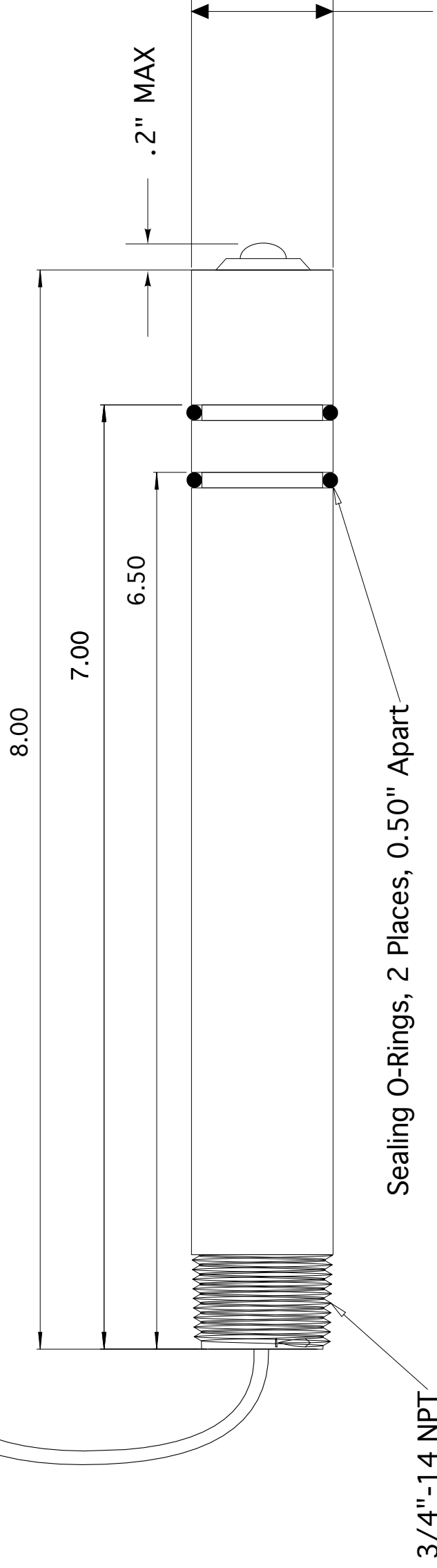
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For end of cable terminations and wiring detail please see spec sheet



A

A

3/4"-14 NPT

Sealing O-Rings, 2 Places, 0.50" Apart

1.050

**NOTES**

1. All dimensions are in inches, unless otherwise indicated with tolerances as detailed below
2. Sensor body material of construction is RADEL (5X31), PEEK (5X41) or RYTON (5X51)
3. O-ring material of construction is Viton-75 standard; CV75, Simriz 485 & Kalrez 4079 Optional
4. Drawing shown without protective tines. Max protusion of low-profile parabolic slurry/viscous resistant X3XX series pH sensor past body is 0.20" inches yielding a max overall length of 8.20 inches.
5. With Protective tines "GR" (4 places, 90 degrees apart) or "GRO" (2 places, 180 degrees apart) configurations overall sensor length is 8.00 inches.
6. This sensor is only for use with ASTI supplied sanitary and valve retractable sensor holders.
7. See installation procedures for proper insertion of this sensor into the mating holder.

B

B



Advanced Sensor Technologies U.S.A.  
Website: <http://www.astisensor.com>

DRAWN BY RH		TOLERANCES	
CHECKED BY TADP		1 Place: ± .1	3 Places: ± .005
APPROVED BY MJP		2 Places: ± .01	4 Places: ± .0005
		Angular: ± 0.25°	

TITLE Sensor for Sanitary & HOT-TAP/Retractable Use			
SIZE B	PROJECT SAN / VR	DRAWING NO. 5-2 Low-Profile pH Glass	REV /
SCALE Not to Scale	MODEL 5X31, 5X41, 5X51	SHEET 1	OF 1

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